

REMARKS

Claims 1-9, 11, and 16-25 are pending in the present application. Claims 1, 8, 18, and 22 are independent.

Reconsideration and allowance are respectfully requested in view of the following remarks.

Claim Rejections Under 35 U.S.C. § 103

Claims 18-25 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Khorram (U.S. Patent No. 7,088,969 B2, hereinafter "Khorram") in view of Kintis et al. (U.S. Patent No. 6,049,250 A, hereinafter "Kintis"). This rejection is respectfully traversed.

An exemplary embodiment of the disclosure provides an amplifier unit including a first amplifier (e.g. transistor 110a) and a second amplifier (e.g. transistor 110b), each of which includes a source (e.g. lowest terminal in Fig. 1), a drain (e.g. highest terminal in Fig. 1), and a gate (e.g. middle terminal in Fig. 1). In the exemplary amplifier unit, the gate of the first amplifier 110a and the gate of the second amplifier 110b are connected to a common gate connection (e.g. the nodes connected to DC feed 120). The drain of the first amplifier 110a and the drain of the second amplifier 110b are connected to a common drain connection (e.g. the nodes connected to DC feed 130). The drain of the first amplifier 110a is connected to the gate of the second amplifier 110b. See, for example, paragraph 11 of the specification, which provides that exemplary embodiments can include a DC feed 130 that provides a bias on the drain of transistors 110a, 110b, and 110c.

Independent claims 18 and 22 broadly encompass features of the above-described embodiments. For example, claim 18 recites that the drain of the first amplifier is connected to the gate of the second amplifier, and broadly encompasses features of the above discussed embodiments. Claim 21 recites that the drain of the second amplifier is connected to the gate of the third amplifier (e.g. transistor 110c in Fig. 1).

In Fig. 9 of Khorram, a highly linear power amplifier 212 is illustrated.¹ The power amplifier 212 includes an input signal 236 and an output 240. The amplifier 212 of Khorram includes a number of transistor pairs 224, 226, 228. Each transistor pair 224, 226, 228 includes an enable transistor and an input transistor. The gates of the input transistors are commonly coupled to the input signal 236. The enable transistors are coupled to individual enable signals 244, 246, 248. The enable signals 244, 246, 248 enables any combination of the input transistors to be coupled to the output 240 so as to produce a desired gain for the power amplifier 212.

In rejecting the claims 18-25, the Examiner starts with Khorram but acknowledges that the transistors of the highly linear power amplifier of Fig. 9 of Khorram are not arranged as claimed. In particular, the Examiner admits, "Khorram does not teach wherein the drain of the first amplifier is connected to the gate of the second amplifier."

However, like in the Office Action dated March 30, 2010, the Examiner attempts to combine transistors from a type of amplifier—of Kintis in this case—which has a different configuration from the amplifier of Khorram.

¹ The discussion of the amplifier 212 of Khorram focuses on the upper portion of the amplifier 212 connected to component 220, but it also applies to the lower portion of the amplifier 212 connected to component 222.

Kintis discloses two main types of amplifiers: **(1)** the "prior art" amplifier of Fig. 1 discussed in cols. 1 and 2; and **(2)** the "improved" amplifier of Fig. 2, which can "allow the gain to be varied without affecting the bandwidth of the device" (col. 2, lines 35-47, as cited by the Examiner on page 3 of the Office Action as the alleged reason for combination).

The Examiner bases the rejection on the different amplifiers of both Figs. 1 and 2 of Kintis. However, Kintis discloses that only Fig. 2 has the advantage of a variable gain, stating in col. 2, lines 15-17 that the gain of the Fig. 1 amplifier is fixed. Accordingly, the rejection based on Fig. 1 is improper for at least the reason that the alleged reason for combination does not apply to Fig. 1 of Kintis.

It is unclear as to exactly how the Examiner is proposing to combine the disclosures of Khorram and Kintis. If the Examiner is to continue to attempt to combine (1) Khorram and Fig. 1 of Kintis and/or (2) Khorram and Fig. 2 of Kintis in rejecting the application, Applicant respectfully requests further clarification as to whether Kintis is being modified with features of Khorram or whether Khorram is being modified with features of Kintis, what the resulting circuitry would look like, and what the circuit based on Fig. 1 of Kintis would look like versus the circuit based on Fig. 2.

Other than the Examiner's conclusory assertion, there is no reason why one skilled in the art would attempt the alleged combination to arrive at a functioning linear, multiple stage power amplifier. Khorram and Kintis both disclose amplifiers with unique structures and different transfer characteristics, precluding one skilled in the art from having had a reason to modify the documents in the combination alleged by the Examiner. For example, Khorram describes a highly linear power amplifier

without any feedback. In contrast to Khorram, Kintis discloses a distributed feedback distributed amplifier not described as linear. Thus, the Examiner has not established how one skilled in the art would have been able to use the disclosure of Kintis to modify Khorram (or vice versa) to result in the claimed invention. The Examiner's proposal to modify the interconnections of the transistors which make up the building blocks of Khorram and Kintis would result in wholly different circuitry from the individually disclosed amplifiers of Khorram and Kintis.

It is improper to combine bits and pieces of incongruous references in an attempt to arrive at the subject of a claim without a reasonable motivation for doing so. Furthermore, in proposing to combine two wholly different amplifiers in a manner that is not even apparently able to be articulated, other than in an attempt to arrive at the claimed invention. The Examiner must demonstrate with appropriate technical reasoning why such a theorized modification could predictably lead one skilled in the art to combine the various bits and pieces of the applied references to arrive at the claimed invention. See MPEP 2143(a).

Khorram and Kintis, whether considered alone or in the combination set forth by the Examiner, do not disclose all of the features of claims 18 and 22. Accordingly, these claims are allowable.

Dependent claims 16, 19-21, and 23-25 are allowable by virtue of their dependency from allowable claims 18, and 22 and on their own merits. For example, the alleged combination does not disclose a third amplifier or third transistor, arranged in the manner recited in claims 21 and 25.

In another example, the first and second bias currents of claims 20 and 24 are not disclosed in Khorram and Kintis, whether considered alone or in combination.

The Examiner alleges that input signal 236 corresponds to a bias current, but the input signal 236 is the input to the amplifier. One skilled in the art would have understood that an input signal of an amplifier is not that same as a bias current. In addition, the Examiner points to transistor pair 228 as being a bias current, but the transistor pair is not a bias current; the transistor pair is the portion of the amplifier used for amplification.

Allowable Subject Matter

Applicant notes with appreciation the indication that claims 1-7, 8, 9, 11, and 17 are allowable.

Conclusion

From the foregoing, further and favorable action in the form of a Notice of Allowance is respectfully requested.

In the event that there are any questions concerning this amendment, or the application in general, the Examiner is respectfully requested to telephone the undersigned so that prosecution of present application may be expedited.

Respectfully submitted,

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